

AMENDMENTS TO THE CLAIMS

Please amend the claims as indicated below.

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of the Claims:

Claim 1 (Currently Amended): A process for the production of sulphuric acid, comprising reacting a sulphur dioxide-containing feed gas, at least in part, with oxygen in at least two contact stages of main contacts, arranged in series, to generate sulphur trioxide, feeding the generated sulphur trioxide-containing gas to an absorber and reacting said sulphur trioxide-containing gas therein to form sulphuric acid, withdrawing a partial stream of the sulphur dioxide and sulphur trioxide-containing gas from a contact stage located upstream of the last main contact stage, mixing said partial stream with the feed gas to form a contact gas having a sulphur dioxide content of more than 13 % by volume, and returning said mixed partial stream to the first contact stage, wherein the contact stages contain a catalyst and wherein the partial stream withdrawn from the contact stage located upstream of the last main contact stage has a sulphur trioxide content of from about 9 % by volume to about 21 % by volume.

Claim 2 (Previously Presented): The process according to claim 1, wherein the contact gas has a sulphur dioxide content of between 14 and 25 % by volume.

Claim 3 (Previously Presented): The process according to claim 1, wherein air and/or technical oxygen is supplied to the feed gas prior to being mixed with the partial stream, and wherein the O₂ to S₀₂ ratio in the contact gas, based on the volumetric portions thereof, is adjusted to less than 1.2.

Claim 4 (Previously Presented): The process according to claim 3, wherein the volumetric portion of the partial stream supplied to the feed gas amounts to between 15 and 35% of the contact gas.

Claim 5 (Previously Presented): The process according to claim 1, further comprising providing a pre-contact upstream from the main contact to which the contact gas is fed, withdrawing a process gas containing no more than 13 % by volume of sulphur dioxide from the pre-contact, and supplying said process gas to the first contact stage of the main contact.

Claim 6 (Previously Presented): The process according to claim 5, wherein the pre-contact comprises one or two pre-contact stages.

Claim 7 (Previously Presented): The process according to claim 5, wherein the process gas discharged from the pre-contact, prior to being introduced into the main contact is passed through a pre-absorber.

Claim 8 (Previously Presented): The process according to claim 5, wherein the process gas discharged from the first main contact, prior to being introduced into the second main contact is supplied to an intermediate absorber.

Claim 9 (Previously Presented): The process according to claim 5, wherein the process gas discharged from the second main contact is supplied to a final absorber.

Claim 10 (Previously Presented): The process according to claim 5, further comprising conducting at least part of the process gas discharged from the pre-contact via a bypass line past a pre-absorber directly into the main contact.

Claim 11 (Previously Presented): The process according to claim 9, wherein the gas discharged from the final absorber is subjected to gas scrubbing with hydrogen peroxide, ammonia or sodium hydroxide forming the neutralizing agent for the sulphur dioxide.

Claim 12 (Previously Presented): The process according to claim 9, wherein the partial stream, prior to being returned to the first contact stage, is cooled to a temperature of less than 500 °C.

Claim 13 (Previously Presented): The process according to claim 9, wherein the amount of the gas re-circulated as the partial stream is adjusted on the basis of the temperature at which the gas leaves the first contact stage.

Claim 14 (Withdrawn): A plant for the production of sulphuric acid, comprising at least two contact stages of main contacts arranged in series for converting a sulphur dioxide-containing feed gas with oxygen to generate sulphur trioxide, at least one absorber, and a pre-contact, located upstream of the main contact stage, comprising at least one pre-contact stage, wherein the exit of one contact stage located upstream of the last contact stage of the main contact, is connected with the inlet of the first pre-contact stage via a re-circulation line.

Claim 15 (Withdrawn): The plant according to claim 14, wherein the re-circulation line comprises a hot gas blower.

Claim 16 (Withdrawn): The plant according to claim 14, wherein the re-circulation line originates at the exit of the last contact stage of the first main contact and leads to the inlet of the pre-contact.

Claim 17 (Withdrawn): The plant according to claim 14, wherein the re-circulation line originates at the exit of the last contact stage of the pre-contact and leads to the inlet of the pre-contact.

Claim 18 (Withdrawn): The plant according to claim 14, wherein the pre-contact comprises one or two pre-contact stages, the first main contact comprises three main contact stages, and the second main contact comprises two main contact stages.

Claim 19 (Withdrawn): The plant according to claim 14, between the pre-contact and the first main contact, an intermediate absorber between the first main contact and the second main contact, and a final absorber downstream of the second main contact.

Claim 20 (Withdrawn): The plant according to claim 19, further comprising, between the pre-contact and the first main contact, a bypass line leading around the pre-absorber.

Claim 21 (Withdrawn): The plant according to claim 14, further comprising, between the inlet lines of the pre-contact and of the first main contact, a bypass line leading around the pre-contact.

Claim 22 (Previously Presented): A process for the production of sulphuric acid, comprising reacting a sulphur dioxide-containing feed gas, at least in part, with oxygen in at least two contact stages of main contacts, arranged in series, to generate sulphur trioxide, feeding the generated sulphur trioxide-containing gas to an absorber and reacting said sulphur trioxide-containing gas therein to form sulphuric acid, withdrawing a partial stream of the sulphur dioxide and sulphur trioxide-containing gas from a contact stage located upstream of the last main contact stage, mixing said partial stream with the feed gas so as to form a partial stream and feed gas mixture having a sulphur dioxide content of more than 13 % by volume and feeding the mixture into a pre-contact upstream from the main contact, withdrawing a process gas from the pre-contact, and supplying said process gas to the first contact stage of the main contact, wherein the contact stages and the pre-contact contain a catalyst.

Claim 23 (Previously Presented): The process according to claim 22, wherein the process gas contains no more than 13 % by volume of sulphur dioxide.

Claim 24 (Previously Presented): The process according to claim 22, wherein at least one of air and technical oxygen is supplied to the feed gas prior to being mixed with the partial stream, and wherein the O₂ to SO₂ ratio in the partial stream and feed gas mixture, based on the volumetric portions thereof, is adjusted to less than 1.2.

Claim 25 (Previously Presented): The process according to claim 24, wherein the volumetric portion of the partial stream supplied to the feed gas amounts to between 15 and 35% of the partial stream and feed gas mixture.